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A New Species of the Genus *Ypthima* HÜBNER from Mindanao, the Philippines (Lepidoptera, Satyridae)

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In December 1976 to January 1977, Mr. Akira YAMAMOTO collected several specimens of an interesting species of the genus *Ypthima* HÜBNER at Mt. Apo, Mindanao, the Philippines. The same species was also collected by Mr. Yasusuke NISHIYAMA at the same locality in 1977 to 1978 and by myself in 1978. I have studied this species not only on its external morphological characters but on its habits in the field in comparison with the known species of *Ypthima*. Recently I have come to the conclusion that this is an undescribed species of the genus. In this paper I describe the new species and give biological notes on its adult habits.

The present new species apparently belongs to the *pandocus*-group of this genus (SHIRÔZU & SHIMA, 1979) and seems to be most closely allied to *Y. sempera* FELDER, 1863, occurring in the Philippines. The discovery of a new species of the *pandocus*-group from the Philippines is very interesting in considering the phylogenetic relationships and zoogeographical distribution of the group.

Ypthima sensilis sp. nov.

♂. *Upperside of forewing*: Ground colour dark brown; sexual brand well developed; inner and outer discal fasciae absent; submarginal fascia narrow and dark; marginal fascia obscure; rather large, narrowly yellow-ringed, bipupilled, black subapical ocellus present, inner half of the yellow ring usually screened by male brand; fringe dark brown.

Upperside of hindwing: Ground colour dark brown; inner discal fascia indistinct; outer discal fascia sometimes weakly developed; submarginal fascia weak, broadened from cells 5 to 3; space between outer discal and submarginal fasciae sometimes pale brown; rather large, narrowly yellow-ringed, single-pupilled, black ocellus present in cell 2; small, oval, narrowly yellow-ringed geminate ocellus present in cell 1b; small, narrowly yellow-ringed or ringless, single-pupilled black ocellus rarely present in cell 6; still small, yellow-ringed black ocellus rarely present in cell 3; fringe brown.

Underside of forewing: Ground colour dark brown; striation inconspicuous, especially on basal half; inner discal fascia rarely traceable; outer discal fascia rather broadly developed, especially in cells 2 to 1b; submarginal fascia as on upperside; large, yellow-ringed, bipupilled black subapical ocellus present, yellow ring broader than on upper side; fringe dark brown.

Underside of hindwing: Ground colour dark brown, broadly whitish grey except

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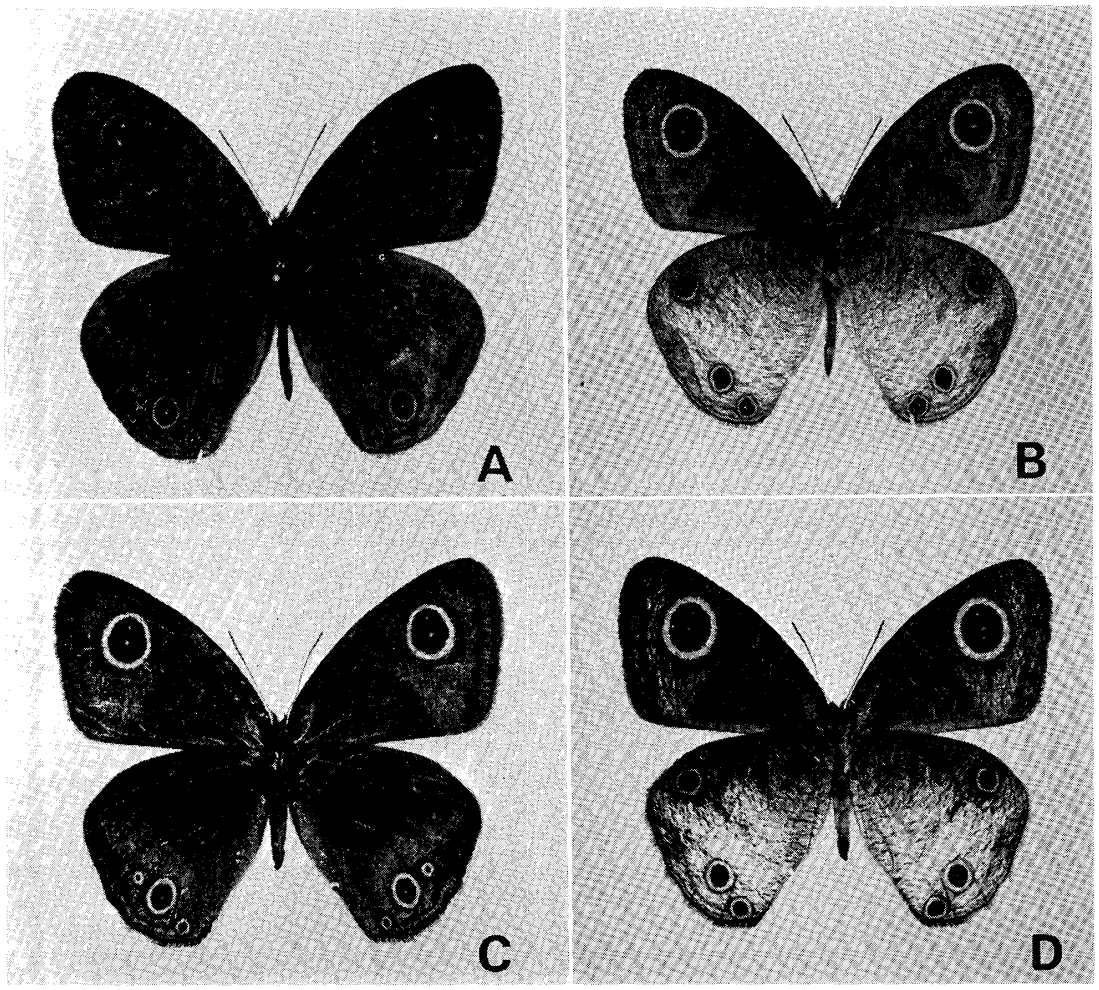

Fig. 1. *Ypthima sensilis* sp. nov. A, B: Holotype, male. C, D: Paratype, female. A, C: Upperside. B, D: Underside.

for anterior 1/4–1/3; striation conspicuous and very fine on the whitish area; inner and outer discal dark fasciae narrowly developed; submarginal and marginal dark fasciae rather distinct, the former broadened from cells 5 to 3 and fused with the latter forming a dark brown stripe; small, single-pupilled, yellow-ringed black ocelli present in cells 6 and 2; ocellus in cell 2 subequal in size to that in cell 6 or slightly larger; small, oval, yellow-ringed geminate ocellus present in cell 1b; fringe brown.

♀. Marking generally same as in male. Ground colour usually paler; yellow ring surrounding ocellus on upperside usually broader and more distinct than in male.

Upperside of forewing: Inner discal fascia indistinct; outer discal fascia weakly developed; space between submarginal and outer discal fasciae paler than inner portion, narrowed posteriorly; subapical ocellus larger than in male.

Upperside of hindwing: Outer discal fascia rather distinct; space between submarginal and outer discal fasciae paler than in male; ocelli in cells 2 and 1b larger than in male; small, yellow-ringed, blind or rarely single-pupilled black ocelli often present in cells 6 and 3.

Underside of forewing: Outer discal and submarginal fasciae weak; space between

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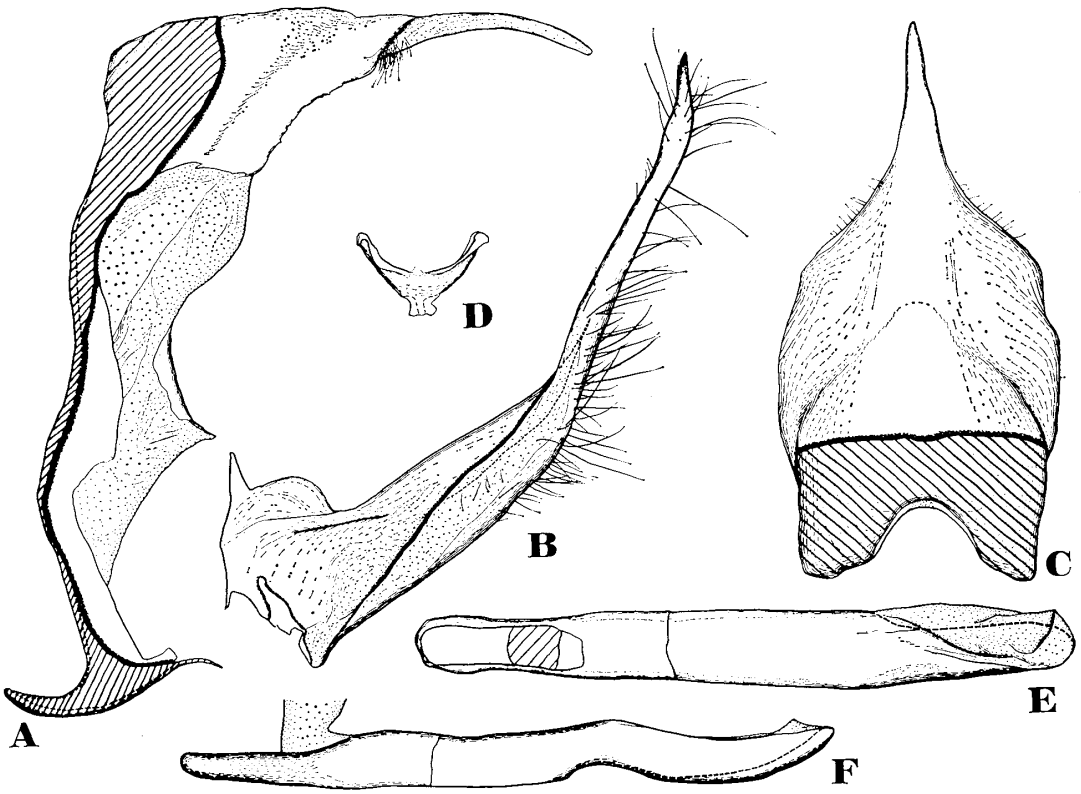

Fig. 2. Male genitalia of *Ypthima sensilis* sp. nov. A: Ring in lateral view. B: Inside of right valva. C: Dorsum in dorsal view. D: Juxta in posterior view. E: Aedeagus in dorsal view. F: Ditto in lateral view.

submarginal and outer discal fasciae distinctly paler than inner portion, weakly and finely striated.

Underside of hindwing: Striation rather coarse on inside of outer discal fascia, dense on space between submarginal and outer discal fasciae.

Head covered with dark brownish hairs and some whitish ones; vertex about 1/3× as wide as head. Antenna dark brown, about 2/5× as long as forewing, apical 1/4 slightly thickened. Labial palpus with 3rd segment about 1/2× as long as 2nd.

Forewing narrow, termen nearly straight; vein R_1 arising well before *r–m* cross-vein. Hindwing rather roundish; anterior corner of termen rather angled.

Male fore leg: Trochanter slightly shorter than tibia; femur about 1.5× as long as tibia; tarsus absent.

Androconia: Basal portion rather broad, narrowed at basal 1/4; apical portion slender, feather like at apex.

Male genitalia: Tegumen in dorsal view somewhat narrow at base, broadened medially, anterior margin deeply concave medially, in lateral view about 2× as high as vinculum, produced posteroventrally, posteroventral margin irregularly serrate; a small membranous incision present on ventral margin of vinculum; appendix angularis weakly developed. Uncus rather short, about 3/8× as long as tegumen, gradually narrowed to weakly pointed apex, in lateral view weakly curved ventrally; narrow membranous slit present at base. Fenestrula indistinct. Saccus about 1/7× as long

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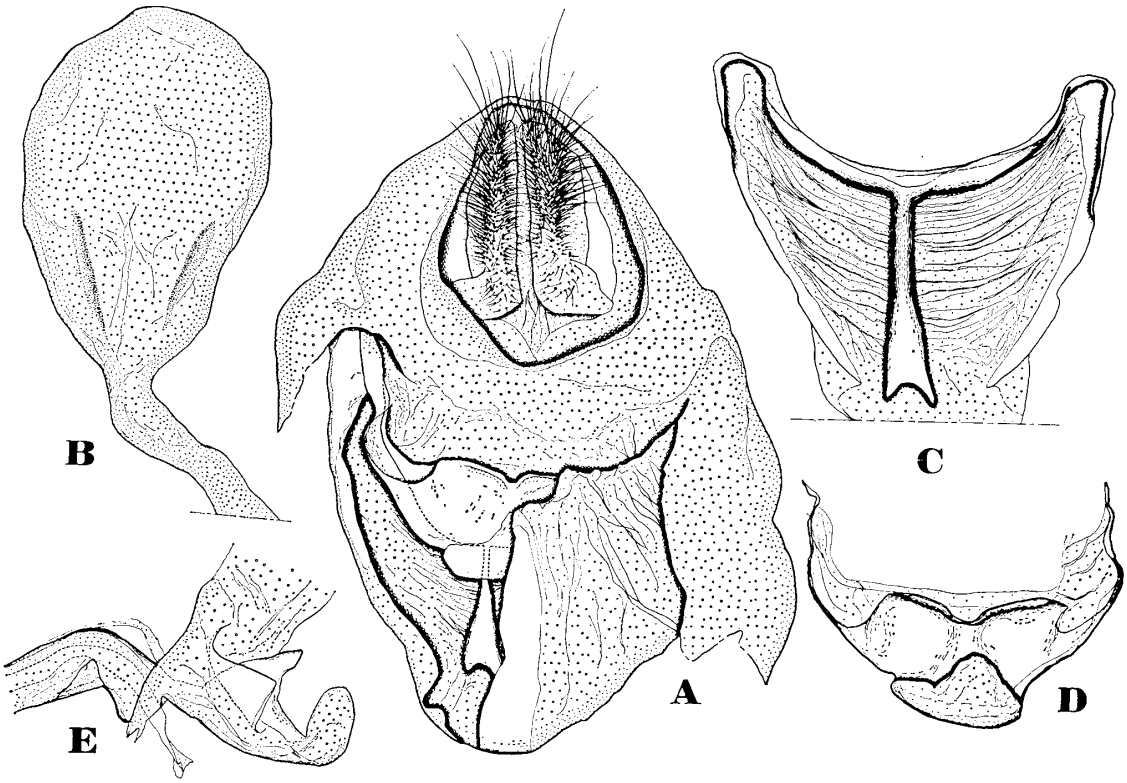

Fig. 3. Female genitalia of *Ypthima sensilis* sp. nov. A: Ventral view, left side of copulatory cavity exposed. B: Bursa copulatrix. C: Central process and lateral lobes of lamella antevaginalis in ventral view. D: Lamella postvaginalis in ventral view. E: Ditto in lateral view.

as ring-height, usually without ventral transverse suture. Aedeagus in dorsal view nearly straight, obliquely membranous from apex to apical 2/7, without flexed apical sclerite, in lateral view weakly curved ventrally at apical 1/3. Valva nearly as long as ring-height, broad at base, strongly narrowed before the middle; costa broad on basal 1/4, narrow and long in posterior portion, continuous to narrow rod-like ampulla+harpe which is weakly expanded at subapical portion and rather pointed at apex; anellifer occupying ventral 1/2 of basal portion of valva, narrowed posteriorly, extending to base of rod-like ampulla+harpe; sacculus indistinct. Juxta weakly sclerotized, U-shaped in posterior view. Subanal area of diaphragma weakly sclertotized.

Female genitalia: Anterior portion of copulatory cavity narrowly sclerotized, narrowed to 7th sternum. Central process of lamella antevaginalis long and slender, weakly broadened towards slightly furcate apex, each furcated apex rather pointed; lateral lobe of lamella antevaginalis narrowly developed, without minute hairs. Lamella postvaginalis in lateral view strongly curved at apical 1/3, with short membranous projection at middle. Ductus seminalis attached to ductus bursae near ostium bursae. Ductus bursae narrowly sclerotized on ventral portion near ostium bursae. Bursa copulatrix with 2 elongate signa. Membranous pouch below papillae anales short.

Forewing length: ♂, 21.4–23.0 mm; ♀, 21.8–24.2 mm.

Distribution: Mountainous regions of Mindanao, the Philippines.

Holotype: ♂, Penangudloton, Upper region of Upian River, Davao City Pro-

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vince, Mindanao, Philippines, 12. iii. 1978, N. KASHIWAI leg.

Paratypes (51♂♂ 20♀♀): 3♂♂1♀, Same data as holotype. Mt. Apo, Mindanao: —2♂♂ 1♀, 1300 m alt., 28. xii. 1976, A. YAMAMOTO & S. TAKEI leg.; 1♀, 1400 m, 5. i. 1977, A. YAMAMOTO leg.; 1♂, 23. xii. 1977, Y. NISHIYAMA leg.; 1♀, 1. i. 1978, Y. NISHIYAMA leg.; 1♀, 3. i. 1978, Y. NISHIYAMA leg.; 6♂♂ 1♀, 15. iii. 1979, T. AOKI & S. YAMAGUCHI leg.; 6♂♂ 1♀, 24. iii–1. iv. 1979, Y. FUNATSU & T. HIROWATARI leg. Agko, 1350 m, Mt. Apo: —2♂♂ 7♀♀, 3. iii. 1978, N. KASHIWAI leg.; 4♂♂ 2♀♀, 6. iii. 1978, N. KASHIWAI leg.; 1♂, 10. iii. 1978, N. KASHIWAI leg.; 5♂♂, 11. iii. 1979, T. AOKI & S. YAMAGUCHI leg.; 7♂♂ 2♀♀, 14. iii. 1979, T. AOKI & S. YAMAGUCHI leg.; 1♂ 1♀, 1. viii. 1979, S. OKAJIMA leg.; 2♂♂, 1. viii. 1979, W. SUZUKI leg.; 2♂♂, 5. viii. 1979, S. OKAJIMA leg. Sabpangon-Agko, 1300–1350 m, Mt. Apo: —1♂, 4. iii. 1978, N. KASHIWAI leg. Ilomavis-Agko, Mt. Apo: —1♂ 1♀, 15. iii. 1979, T. AOKI & S. YAMAGUCHI leg. A mountain near Ayala, Zamboanga, Zamboanga der Sur Province: —7♂♂, 16. v. 1979, S. YAMAGUCHI leg.

Holotype and some paratypes will be deposited in the collection of the National Science Museum, Tokyo. The other paratypes will be deposited in the collection of the following institutions and in private collections: Osaka Museum of Natural History, Osaka; Biological Laboratory, College of General Education, Kyushu University, Fukuoka; Research Institute of Evolutionary Biology, Tokyo; Entomological Laboratory, University of the Philippines, Los Baños; British Museum, Natural History, London; Messrs. A. YAMAMOTO, S. TAKEI and Y. UÉMURA, and N. KASHIWAI, Tokyo.

Remarks. This species apparently belongs to the *pandocus*-group in having the following characters: Underside of hindwing with 3 ocelli in cells 6, 2 and 1b; forewing vein R_1 arising before *r–m* crossvein; valva of male genitalia narrow, long, twisted medially and pointed at apex, base of valva expanded dorsally.

This species has, however, a distinctive character which differs from the generalized character of the *pandocus*-group: The ventral transverse suture of the saccus of the male genitalia is usually absent in this species. As the presence of this suture was considered to be one of the synapomorphies of the *pandocus*-group (SHIRÔZU & SHIMA, 1979), this species seems to be most primitive in this character among the members of the group.

In the *pandocus*-group this species most closely resembles *Y. sempera* FELDER[2] from Mindanao, but may be distinguished from it by the following characters in the wing markings and the male and female genitalia: Forewing narrower, ground colour darker on both sides, subapical ocellus of forewing usually larger and its yellow ring narrower, male brand more strongly developed, underside of hindwing more whitish, striation finer and ocelli in cells 6, 2 and 1b usually larger; in male genitalia, uncus slightly longer and thicker, rod-like ampulla+harpe of valva shorter and trans-

[2] The Philippine species, *Y. sempera,* is now considered to contain two different species; one of them is relatively small, whitish in wing markings on underside and seems to prefer forest, while the other is larger, greyish and more frequently appears in sunny place than the former. These two species are very similar to each other and the distinguishing characters of *Y. sensilis* mentioned above may be applicable to both species, though *Y. sensilis* is mainly compared with the latter species in this paper. The detailed discussion concerning the specific names of these two species and the phylogentic relationships among three Philippine species of the *pandocus*-group of *Ypthima* will be made in the other paper.

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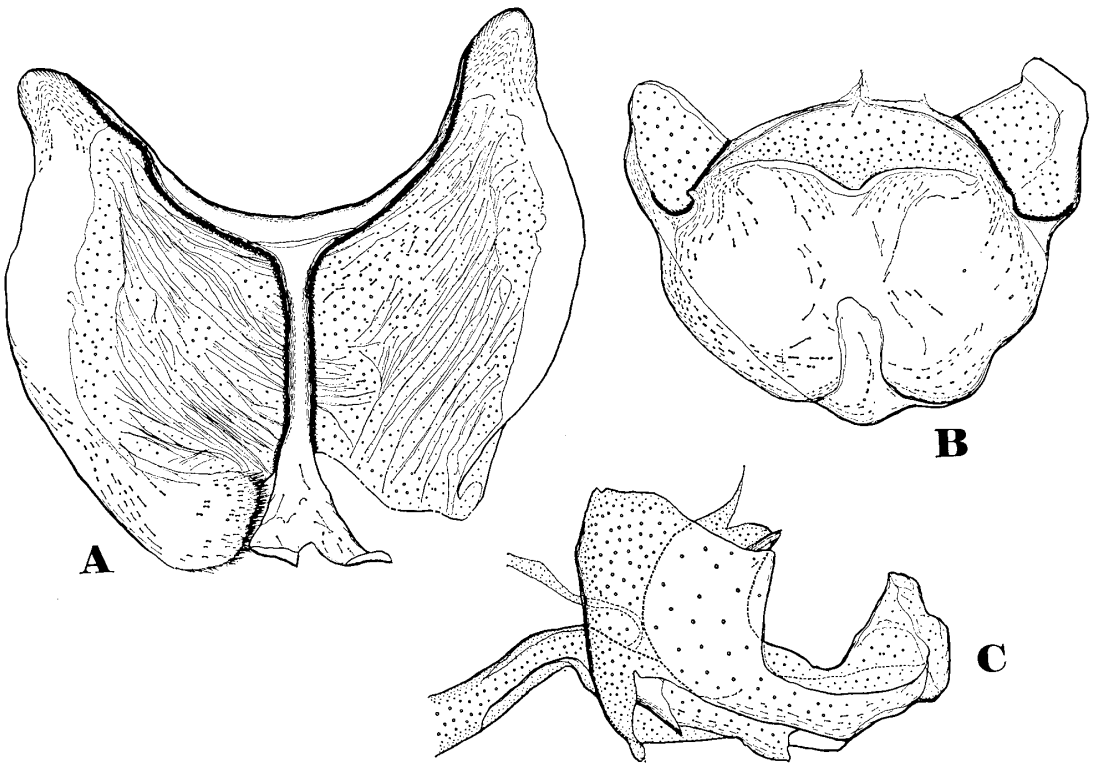

Fig. 4. Female genitalia of *Ypthima sempera* FELDER. A: Central process and lateral lobes of lamella antevaginalis in ventral view; the right lateral lobe removed. B: Lamella postvaginalis in ventral view. C: Ditto in lateral view.

verse suture of ventral surface of saccus usually absent; in female genitalia, central process of lamella antevaginalis slender and only weakly broadened on apical portion, lateral lobe of lamella antevaginalis very weakly developed and lacking minute hairs and membranous projection of lamella postivaginalis short, broad and rounded in apical portion.

Habits. *Y. sensilis* occurs sympatrically with *Y. sempera* at Mt. Apo, but both can be distinguished from each other not only by their wing markings but also by their adult behaviour. *Y. sensilis* has more sensitive nature than *Y. sempera*; when an observer approaches the butterfly, it flies swiftly away. The species usually lives in or around the forest. It is rarely found in open and sunny places. In contrast, *Y. sempera* is less sensitive than *Y. sensilis*, more frequently found in open places. *Y. sensilis* occasionally appears in glades to lay eggs; I once observed a female was laying an egg on an exposed root near grasses of the genus *Oplismenus* (Gramineae).

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抄　　録

フィリピン，ミンダナオ島産 *Ypthima* 属の 1 新種（柏井伸夫）

フィリピンのミンダナオ島から ウラナミジャノメ属 *pandocus* 種群の 1 新種，*Ypthima sensilis* を記載した．本種の特徴，習性について述べ，その系統関係について考察を行った．

本種は，後翅裏面 1b, 2, 6 室に眼状紋をもつこと，前翅翅脈 R_1 は *r–m* 横脈手前基部よりから生じること，雄交尾器の valva は細長く，中央でねじれ，先端で尖ること，valva の基部は背方に幅広く伸長することなどの諸点から，*pandocus* 種群に属する．しかし本種には，ふつう雄交尾器の saccus 腹面に切れこみを欠くという，特有の形質がみられる．Saccus 腹面の切れこみは，*pandocus* 種群の固有新形質の 1 つと考えられていたもので (SHIRÔZU & SHIMA, 1979)，本種はこの固有新形質に関しては，もっとも原始的な状態にあると考えられる．

本種はミンダナオ島の山地帯に分布し，フィリピンに広く分布する *Y. sempera* FELDER (2 種を含むと考えられる) に近似し，またこれと混棲もしているが，以下の諸特徴によって後者と区別される：前翅は尖り，地色はより濃いこげ茶色．雄前翅表の性標はよく発達し，前頂部の眼状紋の黄環の基半を覆う．後翅裏面は白化し，波状紋は細かく，1b, 2, 6 各室の眼状紋は大きい．雄交尾器では，uncus はやや長太く，valva の竿状の ampulla＋harpe は短く，多くの個体では saccus 腹面の切れ込みを欠く．雌交尾器では，lamella antevaginalis の中央突起の先端はあまり広がらずに 2 分し，lateral lobe は発達が弱く微毛を欠く．Lamella postvaginalis の膜状突起は短く，幅広くその先端部は丸い．

本種は森林性で，*Y. sempera* に比べ観察者の接近などに対してより敏感に反応し，飛翔する．

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